Medical Libraries and Medical Research

REMARKS OF U.S. Representative Fogarty
Billings Centennial
National Library of Medicine
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Ladies and Gentlemen:

We are here today to honor an individual whose great life and work helped materially in diverse ways to organize and advance the cause of medicine. The debt to Dr. John Shaw Billings is not a debt only of physicians and others in the health sciences. It is a debt of the entire nation. Dr. Billings' achievements in helping to consolidate and focus the progress of medicine through its literature have benefited the lives of all of us, even today, 100 years later.

It is most proper for us to recognize also that it was Dr. Billings, who, through the National Board of Health, actually made the first Federal grants for medical research. In the 1880 Annual Report of the Board, Dr. Billings, in his capacity as Vice President, writes to the Honorable John Sherman, Secretary of the Treasury, to which the Board was answerable. Dr. Billings' letter speaks to the importance of medical research and cites the commendable work of the British government in supporting such research. His report points out that the costs of research exceed the funds available to private investigators and emphasizes that the assistance of the Federal government is therefore necessary. Sounds like 1965.

His report then lists out the types of projects the National Board of Health was supporting. These included:

--studies of the air, a forerunner to our present air pollution research;

--studies of the adulterations of food and drugs,
matters about which we are still concerned;

--sanitation;

--yellow fever;

--disinfectants;

--diphtheria; and still other fields.

I have been extremely pleased to learn that my own state of Rhode Island was included in the research work financed by the old National Board of Health under Dr. Billings' direction. The annual report of the Board of 1882 -- 83 years ago -- contains a report of inspections of health resorts and under that a "Report on Sanitary Conditions in Newport, Rhode Island." It is a very fascinating document including many maps, drawings and illustrations including these three (unfolds three large illustrations). One of these is a map of the City of Newport and the other two are graphs showing occupation figures and nationality figures in Ward 3 of the city.

I am happy to say that the report about Newport was a very good one and I will illustrate this if I may by reading the first sentence of the report: "Newport has always been considered, and unquestionably is, naturally, an exceptionally healthy place." It still is!

From this particular locale here today it is easy to see and feel the importance of Dr. Billings' work, in the dignity, power and significance we in America have given to medicine, and which in turn is serving to give us healthier, longer, more productive and happier lives. We stand on the steps of the world's greatest medical library.

Next door to our north is the world's finest medical research organization. Across the street is the great National Naval Medical Center, and only a short distance from here is the Walter Reed Army Medical Center and the Armed Forces Institute of Pathology.

If there were a pinnacle of the world of medicine at which we could stand, this would be it.

It is a world as yet unfinished, however. We have not defeated disease, disability, birth defects and premature death. These problems continue to challenge us to the limit of our abilities. At the same time, we seem to have achieved, at long last, the opportunity at least for almost total victory. It would seem to be within our grasp to attain an entirely new level of mental and physical health for mankind and perhaps witness the eradication of disease entirely.

We are living in the midst of dramatic and far-reaching changes in the concepts of biomedical research, with the employment of new knowledge, new techniques, new ideas, new instrumentation, and, indeed, new types of personnel, such as mathematicians and physicists. The influence and effects of the biomedical research effort are becoming wider and its character is changing. There is ample evidence that the biomedical achievements of the near future may be dramatically more significant than any in the past. I have in mind particularly a new spectrum of work in human reproduction and human development; molecular biology and genetics and the new light they promise to throw on work in many other biomedical disciplines; and the extensive work in viruses, in relation to cancer and other diseases.

In this place, on this day, at this particular point in history, is is difficult to avoid a sense of happy anticipation about the new hope being offered us by the health sciences; and it is proper that we again recognize Dr. Billings' work in having begun this great institution, this library, where this new knowledge resides for man's present and future use.

However, let me read something to you:

> "Unless major attention is directed to the improvement of our national medical library base, the continued and accelerated generation of scientific knowledge will become increasingly an exercise in futility."

The statement is from the report by the President's Commission on Heart Disease, Cancer and Stroke.

Let us consider carefully what this statement means. It is saying that the great potential benefits of medical research which I have just been talking about are not improving the health of our nation as they might. It indicates that the financial, human and institutional investments we are pouring into research, to bring about better health for the American people, may be wasted or lost for the want of better facilities and methods to house, manage and disseminate the medical literature.

This is indeed a curious commentary on the nation which leads the world in its concern for health and medicine; and it could be a tragic commentary if the vast sums the Federal government spends for medical research, education and practice, were being rendered less effective because we are not willing to spend a few more dollars, relatively, for the medical libraries which serve as the communication centers for health science

information.

Just how much money are we talking about?

If we talk only of research, the Federal government is spending well over one billion dollars, and private sources are spending another 600 million or 700 million dollars. Last year, out of the one billion dollars provided in Federal funds, less than one million, under present legislative authorities, could accrue to the benefit of the non-government medical libraries. That's about one-tenth of one percent. The Federal government is simply not paying its share of the nation's costs for medical communications, even though it has helped to intensify the problem by its emphasis on, and support of, medical research.

We must remember that the medical libraries, as the prime storehouses and distributors of health science information, are feeling the pressures of all of our national activities in relation to health and medicine, both private and public. All of the tremendous increases in health and medical activities have an impact on the medical libraries. All research papers, journals, pamphlets, reports, conference proceedings, handbooks -- nearly every printed document, in fact, which grows out of our concern for man's health, becomes something the medical libraries must acquire, store, and disseminate to those who need the information.

My special concern here today is for the medical libraries in relation to the promise held for us in medical research. Medical research is impossible without an adequate information base, without the resources and services of medical libraries. It has been said -- and I believe this must be true -- that all medical research begins and ends with the medical literature. If this is so true, then why are we jeopardizing our own

purpose by scrimping when it comes to giving the medical scientist the library tools he needs?

Sir William Osler, who was a close friend of Dr. Billings, once said: "To study the phenomena of disease without books is to sail an uncharted sea, while to study books without patients is not to go to sea at all." This applies today as it did at the turn of the century.

The literature constitutes an integral part of the process of studying human biology and human diseases. To limit its usefulness is to limit the scientist and to limit man's chance for the new level of health I talked about earlier.

Today it clearly is not enough to say that medical scientists need information. The real question, instead, is just how do we meet their information requirements? We long ago recognized -- or we should have recognized -- that the production of books and journals was not enough and that putting these books and journals in libraries was not enough. Dr. Billings saw this 86 years ago. He instituted control and access to the literature by producing the first comprehensive index to medical articles in 1879. This has been acknowledged by many to be America's greatest contribution to medicine in the 19th century.

But the quantity of the literature for some years has so overwhelmed all of our information-handling concepts as to render them obsolete. The worldwide production of biomedical literature is now estimated at more than 250,000 articles or five million pages per year. That many pages would constitute a stack higher than the Empire State Building. Dr. Vannever Bush in 1944 said: "The summation of human experience is being

expanded at a prodigious rate, but the means we use for threading through the consequent maze to the momentarily important item is the same as was used in the days of square rigged ships -- the modern great library is not generally consulted; it is just nibbled at by a few." Libraries must be made attractive and more functional so that bigger bites of information are taken by those who need it.

The quantity of the literature, however, is not the only problem. Our achievements have been such that the whole character of biomedical research has changed and out of this change has come a transformation in the structure of the health sciences. The particular classification of the sciences -- necessary for their organization in teaching and research -- has been outmoded. The divisions between disciplines have faded and new disciplines have been formed. Some, as we have noted earlier, have been found to have significance in nearly all other biomedical disciplines.

So the problem of the scientist is not only one of tremendous magnitude in the literature but one also in which the disciplinary guidelines have ceased to have their former meaning. The complex interrelationships of the vast amount of data with which he is confronted may be such as to keep him from knowing just where to look; and certainly these two situations of quantity and complexity conspire not only to consume the time which he should be spending at his bench, but possibly also to bring confusion and frustration into his efforts.

NLM has begun to meet this urgent need through the use of computers. MEDLARS (Medical Literature Analysis and Retrieval System) provides a

fast method of recovering bibliographic citations in any medical discipline or any combination of disciplines. However, MEDLARS' tremendous searching power has not yet been decentralized across the nation as it must be soon. It is the only system of its type in the world and its establishment in a research library is a spectacular achievement.

Still we must learn more about the scientist's habits of using information and his requirements for urgency, variety and volume. We must know his needs for secondary publication forms, such as indexes, abstracts, data compendia, critical reviews. These are library functions and they need to be supported considerably beyond the current level.

We must immediately begin to develop medical libraries with a new concept of service responsibilities to the medical scientist. These libraries must have the flexibility and versatility to be active -- not passive -- partners in the research process. They must be staffed with people of imagination, advanced training and special skills necessary to assist the research scientist in every possible way.

Just two months ago Volume II of the report by the President's Commission on Heart Disease, Cancer and Stroke was released. It contains a section entitled "A Program for Developing Medical Libraries." It tells a truly alarming story of the state of disrepair of the nation's medical libraries.

Let me read from one part of the report:

"The cutting edge of the country's medical research programs may be blunted by the growing inability of scientists to gain quick and easy access to biomedical data they need. Teachers and students are hampered in their educational pursuits. Of direct and immediate importance

to the health of the nation are urgent needs of medical practitioners of all types for more ready access to the growing body of new medical information. Inefficiency in the medical library network creates an insidious ignorance which neither science nor the practice of medicine can condone. It results in the unplanned and unnecessary duplication of research efforts. It postpones the application of new knowledge potentially important to the alleviation of human suffering."

It is very difficult for me indeed to think of a more serious charge against this nation.

The report goes on to present hard facts and statistics on the medical library needs. For example, there are 6,000 medical libraries in the United States, but only 3,000 medical librarians -- one-half of a librarian for every library. The needs for additional space, so that the libraries can be of a size sufficient to meet minimal standards, total into the millions of square feet. The requirement for books and journals total into the millions. And in the ares of training, despite the tremendous deficit in the number of librarians, only 40 additional professional librarians are being added to the field of medicine every year -- while the attrition is 150.

The situation is truly desperate.

So this is our challenge. What is to be done about it?

There is before Congress at this time a bill which would establish the legislative and program foundations for this work. I refer of course to the "Medical Library Assistance Act of 1965." This bill constitutes formal recognition for the first time in this nation's history of what have been our failings in the medical information field and of what we must now do to correct our past errors.

I have been tremendously impressed by the reactions of just about all elements of the library and biomedical community to this bill. I will not go into a great amount of detail but I would like to name for your some of the organizations which have formally expressed their wholehearted support of the proposed measure. These include: The American Heart Association, The American Hospital Association, The American Psychiatric Association, The American College of Physicians, The American Federation for Clinical Research, The Association of American Medical Colleges, The American Society for Biological Chemists, The American Thoracic Society, The New York Academy of Medicine, and others.

Notice that none of these organizations is a library organization.

But in addition, of course, there have been formal indications of very strong support by the Medical Library Association, by the Special Libraries Association and by the Association of Research Libraries.

I can think of few legislative measures which have resulted in such a strong, concerted reaction of support from such a broad segment of the American Health Science community.

Great societies of the past invented libraries to preserve and transmit knowledge. If we are to achieve in this nation a society of the greatness I consider possible, we must begin immediately not to reinvent the library but to capitalize on this achievement and to fashion it to these medical research and other needs which have overtaken us in recent years. The challenge before us cannot be met by legislation alone or by the National Library of Medicine alone, or by the private sector of the economy alone. The challenge calls for a wholehearted cooperative

effort by everyone concerned. What Dr. Billings started in 1865 must be further supported in 1965. The future wellbeing of this nation depends on it, literally.

Thank you.